Genesys 7.6

Resource Capacity Planning Guide

About Genesys

Genesys Telecommunications Laboratories, Inc., a subsidiary of Alcatel-Lucent, is 100% focused on software for call centers. Genesys recognizes that better interactions drive better business and build company reputations. Customer service solutions from Genesys deliver on this promise for Global 2000 enterprises, government organizations, and telecommunications service providers across 80 countries, directing more than 100 million customer interactions every day. Sophisticated routing and reporting across voice, e-mail, and Web channels ensure that customers are quickly connected to the best available resource—the first time. Genesys offers solutions for customer service, help desks, order desks, collections, outbound telesales and service, and workforce management. Visit `www.genesyslab.com` for more information.

Each product has its own documentation for online viewing at the Genesys Technical Support website or on the Documentation Library DVD, which is available from Genesys upon request. For more information, contact your sales representative.

Notice

Although reasonable effort is made to ensure that the information in this document is complete and accurate at the time of release, Genesys Telecommunications Laboratories, Inc., cannot assume responsibility for any existing errors. Changes and/or corrections to the information contained in this document may be incorporated in future versions.

Your Responsibility for Your System's Security

You are responsible for the security of your system. Product administration to prevent unauthorized use is your responsibility. Your system administrator should read all documents provided with this product to fully understand the features available that reduce your risk of incurring charges for unlicensed use of Genesys products.

Trademarks

Genesys, the Genesys logo, and T-Server are registered trademarks of Genesys Telecommunications Laboratories, Inc. All other trademarks and trade names referred to in this document are the property of other companies. The Crystal monospace font is used by permission of Software Renovation Corporation, `www.SoftwareRenovation.com`.

Technical Support from VARs

If you have purchased support from a value-added reseller (VAR), please contact the VAR for technical support.

Technical Support from Genesys

If you have purchased support directly from Genesys, please contact Genesys Technical Support at the following regional numbers:

Region	Telephone	E-Mail
North and Latin America	+888-369-5555 or +506-674-6767	support@genesyslab.com
Europe, Middle East, and Africa	+44-(0)-118-974-7002	support@genesyslab.co.uk
Asia Pacific	+61-7-3368-6868	support@genesyslab.com.au
Japan	+81-3-6361-8950	support@genesyslab.co.jp

Prior to contacting technical support, please refer to the *Genesys Technical Support Guide* for complete contact information and procedures.

Ordering and Licensing Information

Complete information on ordering and licensing Genesys products can be found in the *Genesys 7 Licensing Guide*.

Released by

Genesys Telecommunications Laboratories, Inc. `www.genesyslab.com`

Document Version: 76g_pg_rescap_07-2008_v7.6.101.00

Table of Contents

Preface

Welcome to the *Genesys 7.6 Resource Capacity Planning Guide.* This addition to the Genesys documentation set describes the methodology and inner workings of the planning tools Genesys now offers to assist you in managing human resources in a multimedia contact center environment.

This chapter provides an overview of this guide, identifies the primary audience, introduces document conventions, lists related reference information, and invites your feedback:

- Intended Audience, page 5
- Chapter Summaries, page 6
- Document Conventions, page 6
- Related Resources, page 8
- Making Comments on This Document, page 9
- New in This Release, page 9

This guide is valid only for the 7.6.*x* release(s) of this product.

Note: For versions of this document created for other releases of this product, please visit the Genesys Technical Support website, or request the Documentation Library DVD, which you can order by e-mail from Genesys Order Management at `orderman@genesyslab.com`.

Resource capacity planning within the Genesys software environment enables you to create and manage routing strategies for different media types as they apply to various Genesys-defined resources, such as directory numbers, e-mail, chat sessions, and more.

Intended Audience

This guide, primarily intended for system and contact center administrators, assumes that you have a basic understanding of:

- Computer-telephony integration (CTI) concepts, processes, terminology, and applications.
- Network design and operation.

- Your own network configurations.

You should also be familiar with Genesys Framework architecture and T-Server and Stat Server functions.

Chapter Summaries

In addition to this preface, this guide contains the following chapters:

- Chapter 1, "Overview," on page 11, defines some key terms used in this document. This chapter also describes Genesys's distribution method of interactions prior to the Resource Capacity Model.

- Chapter 2, "Resource Capacity Wizard," on page 17, describes how to install and operate the Resource Capacity Wizard to create capacity rules.

- Chapter 3, "Using the Capacity Rule Editor," on page 25, describes the elements of this graphical user interface and how to add and define media rules to your capacity rule.

- Chapter 4, "Assigning Capacity Rules to Resources," on page 35, demonstrates how to associate capacity rules to `Person`, `Place`, and `Tenant` objects.

- Chapter 5, "Genesys-Provided Capacity Rules," on page 41, provides the in-depth media definitions of the three Genesys Capacity rules provided with this release.

- Chapter 6, "Capacity Snapshot," on page 45, describes how to interpret the capacity vector information that Stat Server records in its log.

- Chapter 7, "Troubleshooting Capacity Rules," on page 49, describes how to correct some commonly encountered errors.

Document Conventions

This document uses some stylistic and typographical conventions that you might want to familiarize yourself with.

Document Version Number

A document version number appears at the bottom of the inside front cover of this guide. Version numbers change as new information is added to this guide. Here is a sample version number:

    76g_pg_rescap_7-2008_v7.6.101.00

You will need this number when you are talking with Genesys Technical Support about this product.

Type Styles

Italic

In this document, italic is used for emphasis, for documents' titles, for definitions of (or first references to) unfamiliar terms, and for mathematical variables.

Examples:
- Please consult the *Genesys 7 Migration Guide* for more information.
- *A customary and usual practice* is one that is widely accepted and used within a particular industry or profession.
- Do *not* use this value for this option.
- The formula, $x + 1 = 7$ where x stands for . . .

Monospace

A monospace font, which looks like `teletype or typewriter text`, is used for all programming identifiers and GUI elements.

This convention includes the *names* of directories, files, folders, configuration objects, paths, scripts, dialog boxes, options, fields, text and list boxes, operational modes, all buttons (including radio buttons), check boxes, commands, tabs, CTI events, and error messages; the values of options; logical arguments and command syntax; and code samples.

Examples:
- Select the `Show variables on screen` check box.
- Click the `Summation` button.
- In the `Properties` dialog box, enter the value for the host server in your environment.
- In the `Operand` text box, enter your formula.
- Click `OK` to exit the `Properties` dialog box.
- The following table presents the complete set of error messages T-Server distributes in `EventError` events.
- If you select `true` for the `inbound-bsns-calls` option, all established inbound calls on a local agent are considered business calls.

Monospace is also used for any text that users must manually enter during a configuration or installation procedure, or on a command line:

Example:
- Enter `exit` on the command line.

Screen Captures Used in This Document

Screen captures from the product GUI (graphical user interface), as used in this document, may sometimes contain a minor spelling, capitalization, or grammatical error. The text accompanying and explaining the screen captures corrects such errors *except* when such a correction would prevent you from

installing, configuring, or successfully using the product. For example, if the name of an option contains a usage error, the name would be presented exactly as it appears in the product GUI; the error would not be corrected in any accompanying text.

Square Brackets

Square brackets indicate that a particular parameter or value is optional within a logical argument, a command, or some programming syntax. That is, the parameter's or value's presence is not required to resolve the argument, command, or block of code. The user decides whether to include this optional information. Here is a sample:

```
smcp_server -host [/flags]
```

Angle Brackets

Angle brackets indicate a placeholder for a value that the user must specify. This might be a DN or port number specific to your enterprise. Here is a sample:

```
smcp_server -host <confighost>
```

Related Resources

Consult these additional resources as necessary:

- *Framework 7.6 Stat Server User's Guide*
- *Framework 7.6 Stat Server Deployment Guide*
- *Genesys 7.6 Instant Messaging Solution Guide*
- *Multimedia 7.6 Deployment Guide*
- *Framework 7.6 SIP Server Deployment Guide*
- *Framework Combined Log Events Help*
- The *Genesys Technical Publications Glossary,* which ships on the Genesys Documentation Library DVD and which provides a comprehensive list of the Genesys and CTI terminology and acronyms used in this document.
- The *Genesys 7 Migration Guide*, also on the Genesys Documentation Library DVD, which provides a documented migration strategy from Genesys product releases 5.1 and later to all Genesys 7.x releases. Contact Genesys Technical Support for additional information.
- The Release Notes and Product Advisories for this product, which are available on the Genesys Technical Support website at `http://genesyslab.com/support`.

Information on supported hardware and third-party software is available on the Genesys Technical Support website in the following documents:

- *Genesys Supported Operating Systems and Databases*
- *Genesys Supported Media Interfaces*

Genesys product documentation is available on the:

- Genesys Technical Support website at `http://genesyslab.com/support`.
- Genesys Documentation Library DVD, which you can order by e-mail from Genesys Order Management at `orderman@genesyslab.com`.

Making Comments on This Document

If you especially like or dislike anything about this document, please feel free to e-mail your comments to `Techpubs.webadmin@genesyslab.com`.

You can comment on what you regard as specific errors or omissions, and on the accuracy, organization, subject matter, or completeness of this document. Please limit your comments to the information in this document only and to the way in which the information is presented. Speak to Genesys Technical Support if you have suggestions about the product itself.

When you send us comments, you grant Genesys a nonexclusive right to use or distribute your comments in any way it believes appropriate, without incurring any obligation to you.

New in This Release

This *Genesys 7.6 Resource Capacity Planning Guide* includes a discussion of the following new functionality:

- Stat Server's support for multiple-media DNs, described on :

Other new features for configuring Stat Server statistic definitions and the Stat Server application are described in the *Framework 7.6 Stat Server User's Guide* and the *Framework 7.6 Stat Server Deployment Guide*.

![Genesys - An Alcatel-Lucent Company]

Chapter

1 Overview

Resource Capacity Planning (RCP) represents Genesys's latest methodology for distributing contact center interactions. RCP supports Multi-Channel Routing (Multimedia) in the 7.*x* releases. Together with business-priority routing, RCP enables you to better manage agent workload and interaction delivery.

This chapter contains the following sections:

What Is a Capacity Rule?

A major element of Resource Capacity Planning is a capacity rule, which defines a resource's ability to handle multiple interactions. For RCP methodology, the term *resource* is synonymous with a `Person` object that is configured as an `Agent` and defined in the Configuration Layer. A *capacity rule* is a set of logical expressions that specify the boundaries of a resource's ability to handle one interaction or more than one simultaneous interaction of differing media types.

Even though the capacity planning tools enable you to define rules for all Genesys-provided media types, it makes sense to use only the media types that your set of Genesys solutions supports. The current Multimedia 7.6 release, for example, supports `chat` and `e-mail` media types.

Note: Interactions categorized under the `webform` media type, which was available in prior releases, are now processed as e-mail interactions.

Applying a Capacity Rule to Resources

You can directly associate a capacity rule to an agent (a `Person` object, that is) using Configuration Manager. In such a case, the capacity rule describes the agent's ability to receive interactions. You can also associate a capacity rule to a `Place` object within Configuration Manager. In this case, the rule applies to all agents logged in to that place who do not already have a capacity rule directly assigned to them (that is, to their `Person` objects in Configuration Manager). Lastly, you can associate a capacity rule to a `Tenant` object. The capacity rule applies to all agents belonging to the tenant where no capacity rule is directly assigned to those agents (or their corresponding places). (In single-tenant environments, the tenant is the entire contact center.) For details about how to associate capacity rules to resources, see Chapter 4 on .

Please note, however, that capacity rules only affect the *distribution* of interactions. Capacity rules do not preclude the agent from initiating any number of interactions of any media type on his or her own.

Media Rules

A capacity rule consists of a set of media types and expressions. For every media type, a *media rule* within the capacity rule expresses the boundaries of an agent's ability to receive interactions of that particular media type.

By means of media rules, you may define an appropriate workload for an agent for every media that the agent is allowed to handle. While defining a rule for a specific media, you may consider the simultaneous workload for another media. Figure 1, for example, illustrates a simple capacity rule, named `V1E4`, that contains two media rules.
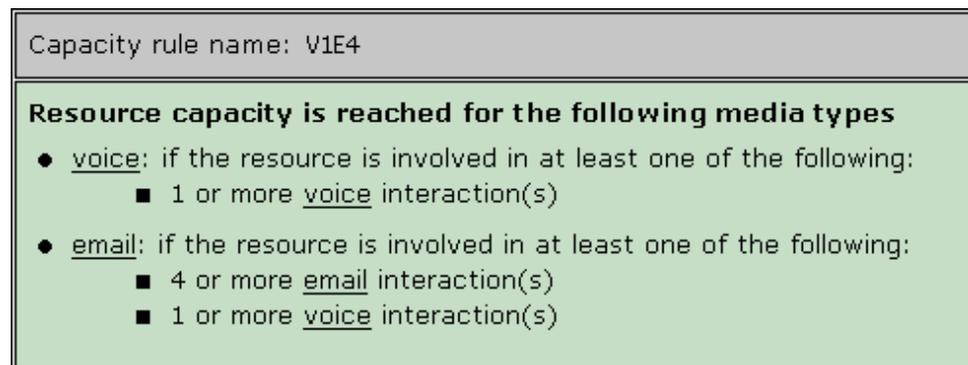
```
Capacity rule name: V1E4

Resource capacity is reached for the following media types
 ● voice: if the resource is involved in at least one of the following:
      ■ 1 or more voice interaction(s)

 ● email: if the resource is involved in at least one of the following:
      ■ 4 or more email interaction(s)
      ■ 1 or more voice interaction(s)
```

Figure 1: A Sample Capacity Rule with Two Media Rules

When assigned to a specific resource, an agent who is named Susan, for example, the `V1E4` capacity rule enables the simultaneous distribution of up to four e-mail interactions to her when she is not working on a voice interaction—that is, when her phone line(s) is (are) free. Furthermore, a new voice interaction could be distributed to Susan if she is currently conducting:

•   No other voice interactions and/or

•   Any number of e-mail interactions.

Conversely, an e-mail interaction cannot be distributed to Susan if she already is working on four e-mail interactions or if she is already working on a voice interaction. However, if Susan only has two e-mail interactions and no voice interactions, then up to two new e-mail interactions that enter the contact

center could be distributed to her, *within the confines of resource capacity planning.* Other factors, outside RCP, may disqualify or prevent her from receiving new interactions. For instance, she may have logged off the `e-mail` media type and surrendered her license to receive e-mail interactions; she may not possess the required skills to handle the interaction; her status may be `NotReadyForNextCall` or she may be performing after-call work; or the environment's routing strategy may favor the distribution of interactions to another agent over her.

Other factors aside, this capacity rule does allow Susan to work with several e-mail interactions simultaneously. Moreover, the capacity rule allows her e-mail-related work to be interrupted when a voice call—generally considered to be a higher priority type of interaction—arrives. You can artificially establish the priority of media types in your contact center environment by designing and applying your own capacity rules. Chapters 2 and 3 introduce the tools you will need to use to accomplish this.

A media rule may be thought of as a logical expression that is applied against the current number of agent interactions per medium. These logical expressions (media rules) define when agents can no longer be available for a new interaction for that particular medium. Media rules are evaluated in runtime for agents, and the Universal Router Server uses these results to make intelligent routing decisions. Consequently, agents may have several simultaneous interactions. If capacity is reached for one particular media type, the agent may still be available for interactions of other media types.

How to Use Capacity Rules

A useful application of resource capacity planning may be to create capacity rules and apply them to the following:

- Agents or collections of agents (not agent groups) of different abilities. You may create different capacity rules for such cases and assign the different rules to agents with different abilities. For example, you could create a `Seasoned` capacity rule and assign it to agents who can handle more chat interactions than lesser-qualified agents. (To the latter, you would assign any of the `NewHire, AverWorkload, or 1ChatOnly` capacity rules that you might create.)

- Expert agents—preserving their expertise by setting an artificially low setting of capacity to prevent from overloading them.

Note: Whether Stat Server considers, in its determination of resource capacity, the interactions initiated or received while the associated DN is in after-call work (ACW) status is configurable. Review the description of the `capacity-treat-acw-as-interaction` Stat Server configuration option in the *Framework 7.6 Stat Server Deployment Guide* for more information.

Genesys Resource Allocation Prior to RCP

The routing-allocation model Genesys used prior to resource capacity planning depended on agent state and the status of the agent's directory number (DN) as determined by Stat Server. This dependency focused heavily on the Genesys call model, which is described in a section of the same name in the *Reporting Technical Reference Guide for the Genesys 7.2 Release*.

The Genesys router, at the point of interaction distribution, selects a target—an agent—from a pool of potential participants consisting only of *ready* agents. `Ready,` from router's default perspective, signifies that an agent has either:

- No monitored interactions currently in progress or

- *All* monitored DNs in `Ready` state. (Other DNs assigned to the agent can reside in a less-than-`Ready` state, such as `Monitored` or `NotMonitored` as determined by the ranking provided in Stat Server's Status Priority tables.)

However, if you have set the router's `useAgentState` configuration option to `false,` then `Ready` signifies that an agent has either:

- No monitored interactions currently in progress or

- *At least one* monitored DN in `Ready` state. (Other DNs which may be assigned to the agent can reside in a less-than-`Ready` state, such as `Monitored` or `NotMonitored` as determined by the ranking provided in Stat Server's Status Priority tables.)

As a result of this ready-agent view, Genesys software, prior to resource capacity planning, supported a one-at-a-time model of interaction distribution. With few exceptions, this model is still well suited for environments distributing live voice interactions. It does not, however accommodate situations where an agent may receive and handle additional live voice calls while he or she is already actively involved in one—as may be preferable in some rare situations when a high-priority call enters the contact center and no other qualified agents are "ready" to handle it. (Given this scenario, the agent could place one call on hold and accept the second call.)

This ready-agent view is also not well suited for non-call-related media, such as e-mail, and is not particularly effective in blended media environments, such as those distributing voice, e-mail, and chat interactions. To accommodate the distribution of multiple media, the 6.1 release of Universal Routing Server extended its strategy language to project the DN model onto interactions of nontelephonic types. This projection required DN configurations for media types like `email` and `chat`—and not just one DN, but a separate DN for each of the interactions that agents could potentially handle simultaneously, for each media type, and for each agent. The number of interactions an agent can simultaneously handle holds a one-to-one correspondence to the number of DNs configured for that agent. This "Media DN" model, however, does not depict reality—it does not allow the distribution of a voice interaction, for instance, to a particular agent if that agent is already participating in an e-mail interaction, nor can we specify that agent is able to accept and participate in a predefined number of interactions simultaneously.

Capacity Planning for Voice Interactions

Because many different types of telephony devices are continually being produced, attention should be paid during capacity planning to some peculiarities in the ways that Genesys software routes voice interactions. Genesys software continually evolves to meet new capabilities. Whereas the initial release of capacity planning limited the number of voice interactions that the Genesys router could direct to a particular Genesys place to one, now the Genesys router can route more than one voice interaction to a Genesys place—under certain circumstances.

A *single-DN place* is a device that has only one directory number ascribed to it.

As a general rule in regard to Genesys environments using a nonSIP Server, Genesys capacity planning enables routing to *single-* or *multi-DN places* where an agent performs a login to each DN. When DNs exist at a place to which the agent does not log in, Genesys software does not consider those DNs in its calculation of resource capacity.

Multi-DN places or *multi-line DNs* are devices that have more than one directory number ascribed to them.

Routing of more than one call to a *multi-line DN* within a Genesys environment is currently unavailable in this release. Meridian and Meridian Link Symposium phones, for instance, present special examples of multi-line DNs that occupy two DNs for each Genesys place: a Position DN and an Extension DN. For this particular configuration, the Genesys Stat Server logs DN status against the Position DN, but only the Extension DN is accessible to the Genesys router for directing calls. Ensure that you consider this when incorporating capacity planning into your routing strategies. IVR phones present additional examples of multi-line DNs for which the Genesys capacity model is unable to direct more than one voice interaction at a time.

There are two exceptions to this general rule:

- The Genesys router can route calls to voice treatment port DNs (IVR DNs) without requiring that agent logins be simulated on these DN types.

- In a Meridian 1/Meridian Link Symposium model, it is the Position DN that the agent logs in to, not the Extension DN. However, the Genesys router routes calls—one at a time—to the Extension DN, given an agent login on the Position DN.

Capacity Planning for Multimedia DNs

Prior to the 7.6 release, Genesys capacity planning, from the routing perspective, treated multi-line DN devices (such as IP phones having simultaneous video and multi-line DN capabilities) as single-line, voice DNs. Genesys software permitted the routing of one and only one voice interaction, for instance, to these DNs, provided that no other voice interaction was already occurring at the DN. The presence of an interaction on a DN prevented the routing of another interaction to that DN, even though the DN was capable of

handling an additional interaction of a different media type. Furthermore, each DN was associated with a single media type.

A *multimedia DN* is a single directory number than can receive simultaneous interactions of more than one media type.

The Stat Server 7.6 release, introduces support for a new DN type—a *multimedia DN*—which is controlled by SIP Server. To specify the physical capacity of a multimedia DN, the `voice` configuration option was introduced in the Framework 7.6 release for `Extension`-type DN objects. Setting this option to `true` enables you to specify whether capacity for voice interactions applies to the multimedia DN. Multimedia DN capacity settings propagate to capacity rules for supported resources. Refer to the "Configuring DNs to Handle Instant Messaging" procedure in the *Genesys 7.6 Instant Messaging Solution Guide* for more information on this topic.

Unlike a single-media DN, a multimedia DN supports multiple medias (for example, voice and chat) on each DN. Introduction of this multimedia DN to a Genesys contact center environment enhances the resource capacity model by enabling the Genesys Universal Router Server (URS) to route multiple interactions to a single instance of such a DN. The model now enables URS to route one or more of chat and/or voice interactions to the same DN, if the DN type is `Extension` configured as `multimedia` and the servicing T-Server is SIP-compliant.

To support this new functionality, the semantics of actions which are generated by Stat Server for statistic and status calculation of multimedia DNs has been updated. In addition to previous classifications:

*   Actions are now *media-dependent* or *media-independent.*

*   Media-dependent actions are *media-unique* or *media-common.*

An action is media-unique if only one action of a particular media type can exist on a device.

For example, the `LoggedIn` action is media-independent. Generation of this action does not rely on the media channel to which an agent registers. Contrarily, the `CallInbound` action is media-dependent because inbound interactions, in the current capacity model, are always associated with one and only one media type. Furthermore, the `CallInbound` action is media-common. All call-related actions are media-dependent and media-common. The `WaitForNextCall`, `NotReadyForNextCall`, and `AfterCallWork` actions occurring on multimedia DNs are classified as media-dependent, media-unique.

Prior classifications of actions ran along the following lines and are still applicable to multimedia DNs:

*   Durable or instantaneous

*   Interaction-related or non-interaction-related

*   Regular DN or mediation DN

Refer to the *Framework 7.6 Stat Server User's Guide* for a complete listing of how Stat Server–generated actions are categorized.

Chapter

2 Resource Capacity Wizard

Use the Resource Capacity Wizard (RCW) and its Capacity Rule Editor (CRE) to create new, or to modify existing, capacity rules. In multi-tenant environments, you may also copy and paste capacity rules between different tenants in Configuration Manager. Genesys recommends that you do not use any other method to create or manage Genesys capacity rules.

This chapter describes how to use the Resource Capacity Wizard:

Installing the Resource Capacity Wizard

1. From the Real-Time Metrics CD, open the `configuration_wizard_ capacity` folder and click `setup.exe`.

2. At the `Welcome` dialog box, click `Next`.

3. At the `Installed Genesys Wizards` dialog box, click `Next`.

    The InstallShield Wizard copies the Wizard to the `genesyscfgwizards` directory.

4. At the `Setup Complete` dialog box, click `Finish`.

Installing the Resource Capacity Wizard also installs its Capacity Rule Editor.

Invoking the Resource Capacity Wizard

Note: You must be using a 7.0.1 or higher version of Configuration Server to invoke the Resource Capacity Wizard.

You can invoke RCW from a number of locations including:

- The Multimedia Wizard. (From the `Framework Objects` screen, select a `Capacity Rule` object type and click `Add` as shown in Figure 2.)
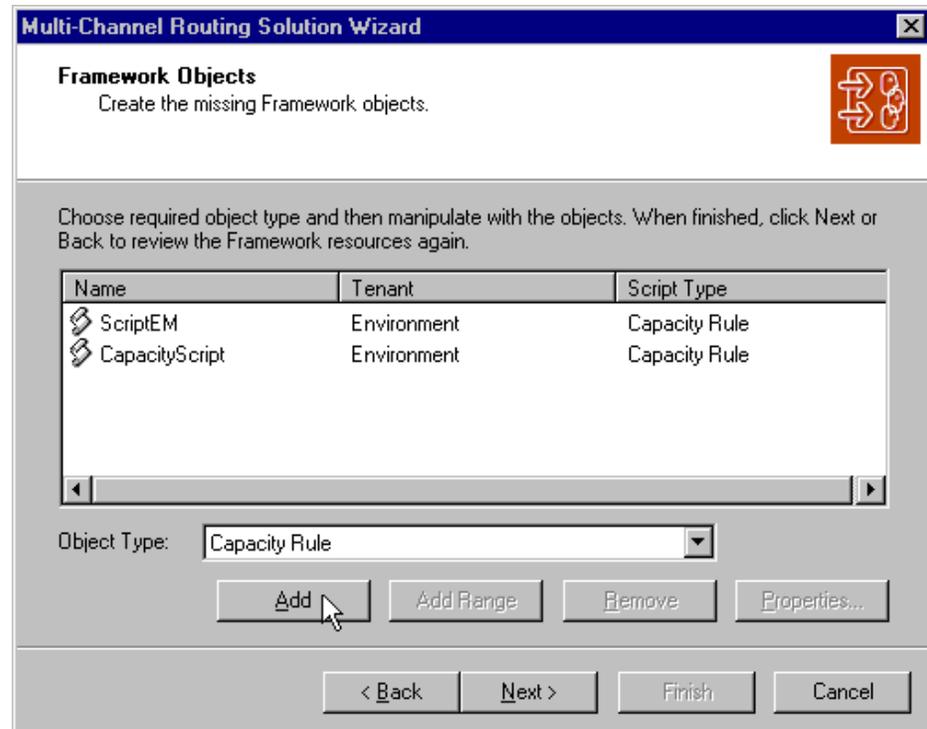
Figure 2: Calling the Resource Capacity Wizard from the Multimedia Wizard

- Configuration Manager. Right-click the `Scripts` folder and select `Wizard > Install > Capacity Rule` from the context menu that appears.

After invoking RCW, you can select one of the two methods to create a capacity rule. Both methods are discussed in the following sections.

Creating a Capacity Rule from Scratch

Use this method if the capacity rule you intend to create significantly differs from any other already created for your tenant.

1. Invoke the Resource Capacity Wizard using one of the methods described in the previous section.

2. At the `Welcome` screen, click `Next`.

3. At the `Capacity Rule Name` screen, type a unique name for the capacity rule, provide a brief description if you wish, and click `Next`.

   The capacity rule you name here is stored in the `Scripts` folder of the Configuration Manager when you complete the Wizard.

4. At the `Creation Method` screen, choose `Create from scratch` and click `Next`.

5. At the `Media Types` screen:

   a. Choose the media types for which you want to define a capacity rule by selecting or clearing the check box preceding each media type. The Wizard displays the media types that have been previously configured for the current tenant, including custom media types.

      Under typical circumstances, you will need just three media types: `voice`, `e-mail`, and `chat`.

   b. For each selected media, in the `Max Capacity` field, specify a realistic maximum number of interactions that a corresponding resource can reasonably handle simultaneously under assumption that only interactions of this media type are present.

      This number must be a positive integer between 1 and 255. When you clear a media check box, the Wizard automatically clears the value in the `Max Capacity` field.

   The media types and maximum values you specify at this screen are used during the next step should you invoke the Capacity Rule Editor. Figure 3, for example, shows three media types selected at this screen.
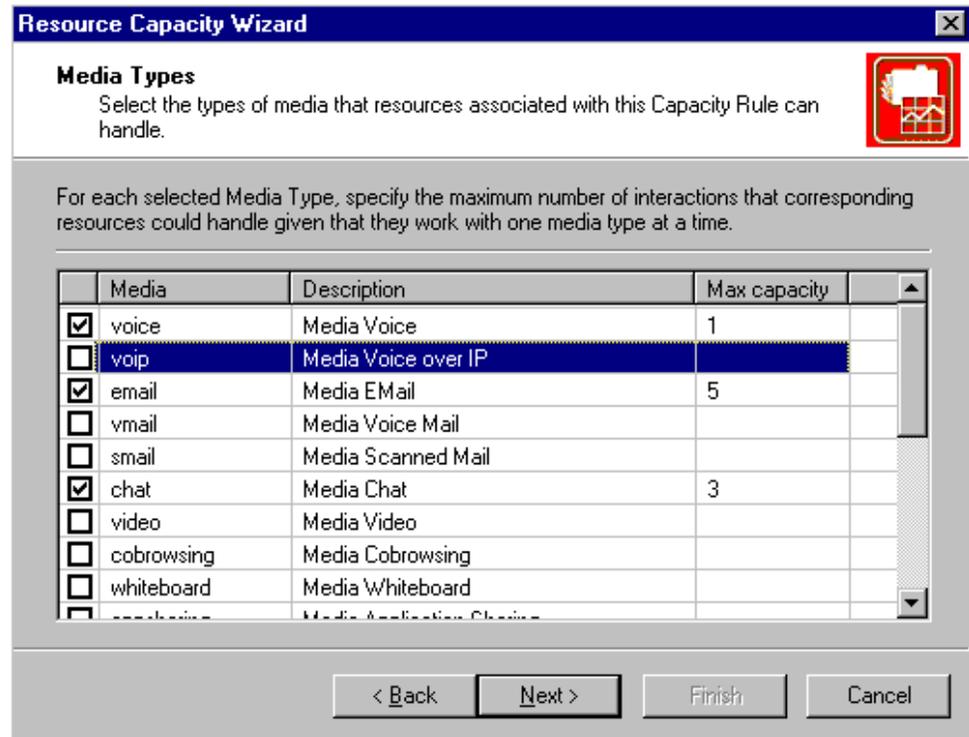
Figure 3: Selecting Media Types for Your Capacity Rule

Click `Next` when you are done.

6. At the `Important Information` screen, invoke the Capacity Rule Editor and refine the media rules if you want your capacity rule to consider resource workloads that consist of interactions of different media. Otherwise, the capacity rule will not consider that a resource's workload for one particular media can influence his or her workload for other media types. When you exit the Capacity Rule Editor, the Wizard returns you to the `Important Information` screen. Click `Next`.

Refer to Chapter 3 on for instructions on how to operate the Capacity Rule Editor.

7. At the `Summary` screen, click `Finish`.

Note: If your capacity rule script contains errors, you must click Back to correct them before terminating the Wizard. Otherwise, the Wizard will not save the script.

If you want to change the capacity rule after you have left the Wizard, open the script's `Properties` dialog box, select `Wizard > Configure` to reinvoke the Wizard, and open the Capacity Rule Editor located on the `Advanced` tab.

Note: You can also create a capacity rule by creating a `Script` object of `Capacity Rule` type within Configuration Manager. In this case, the

Capacity Wizard creates an empty, invalid rule. You must configure it using the Wizard before it can be useful.

Creating a Capacity Rule from an Existing Rule

1. Invoke the Resource Capacity Wizard using one of the methods described previously.

2. At the `Welcome` screen, click `Next`.

3. At the `Capacity Rule Name` screen, type a unique name for the capacity rule, provide a brief description if you wish, and click `Next`.

   The Wizard does not allow you to advance to the next screen without providing a unique name.

4. At the `Creation Method` screen, choose `Create from existing rule` and click `Next`.

5. At the `Existing Capacity Rules` screen, choose the desired rule from the list and click `Next`.

6. At the `Used Media` screen, verify that the media types selected and the maximum capacities indicated are appropriate for your new capacity rule or change them accordingly and click `Next`.

   At this screen, the Wizard displays media types that have been previously configured for the current tenant, including custom media types.

7. At the `Important Information` screen, invoke the Capacity Rule Editor if you wish to change the definitions of the constituent media-type rules. The Wizard copies these definitions from the existing capacity rule you selected at Step 5. Click `Next` when you are done.

8. At the `Summary` screen, click `Finish`.

Configuring a Capacity Rule

You can reconfigure an existing capacity rule once you have created it:

1. From Configuration Manager, right-click the specific capacity rule in the `Scripts` folder.

2. Select `Wizard > Configure` from the context menu that appears.

3. From the `Script Properties` dialog box that appears, click the `Advanced` tab. Figure 4 shows this dialog box of a sample script.

4. Choose the appropriate media and specify the maximum capacity for that media.

5. Invoke the Capacity Rule Editor to change the definitions of constituent media type rules. Exit the Editor when you are done.

6. Click `OK` at the bottom of the `Script Properties` dialog box.
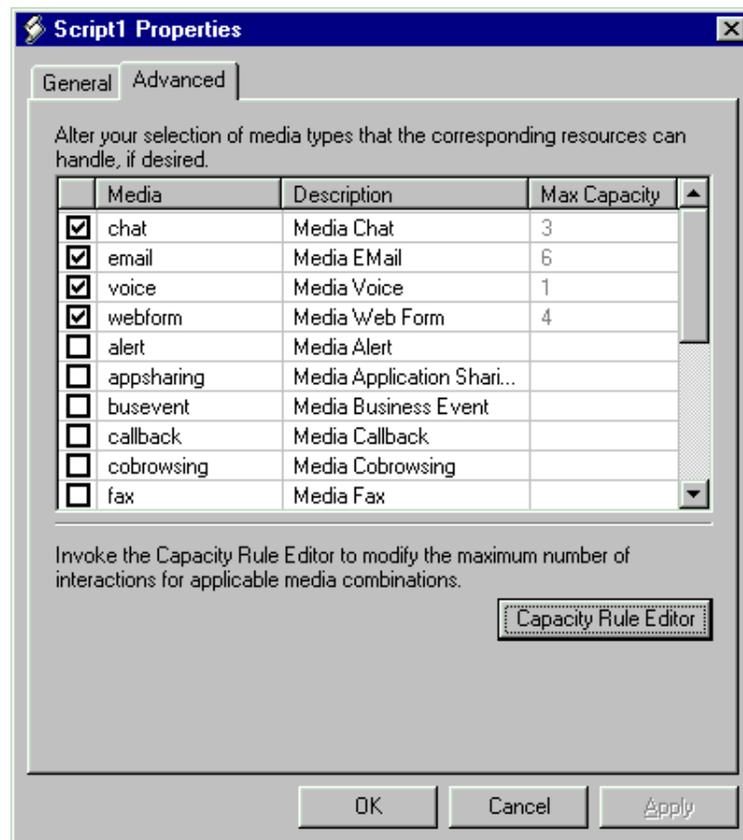
Figure 4: Properties of a Sample Capacity Rule Script

Uninstalling and Deleting Capacity Rules

You can remove a capacity rule script from the Configuration Layer by deleting the corresponding script object in Configuration Manager (or by right-clicking the script object and selecting `Uninstall` from the context menu that appears). You should exercise caution, however, when deleting capacity rules. Make sure that the capacity rule you are about to delete is no longer assigned to `Person`, `Place`, or `Tenant` objects. Deleting a capacity rule while it is still assigned to resources may render the resource unavailable for some or all media. Consult the *Multimedia 7.6 Reference Manual* for more information. The software does not warn you of these circumstances. Deleting the script object automatically removes any assignments of the script to `Person`, `Place`, or `Tenant` objects.

Uninstalling the Resource Capacity Wizard

Uninstall RCW only if you no longer intend to use resource capacity planning functionality or if you decide to downgrade the Wizard's version. You are not required to uninstall RCW if you wish to upgrade its version. Uninstalling the Wizard does not remove any capacity rule scripts from the Configuration Layer nor their assignments to resource objects.

To uninstall the Wizard:

1. From the Control Panel select `Add/Remove Programs`.

2. Select `Genesys Resource Capacity Wizard` from the list and click `Add/Remove`.

3. Click `Yes` at the `Confirm File Deletion` dialog box.

![Genesys - An Alcatel-Lucent Company]

Chapter

3 Using the Capacity Rule Editor

The Capacity Rule Editor (CRE) represents a special mode of the Resource Capacity Wizard. You use the Editor if you need to create a more complex capacity rule or if you must alter an existing, complex capacity rule. Complex capacity rules take into account the interdependency between different media.

This chapter discusses the Capacity Rule Editor in these contexts:

Invoking the Capacity Rule Editor

The `Important Information` screen (Figure 5) of the Resource Capacity Wizard includes a button to invoke the Capacity Rule Editor. To look at the capacity rule that the Resource Capacity Wizard has created based on your selections at the `Media Types` screen (or `Used Media` screen), click this button. You should also invoke CRE if you want to create or edit a complex capacity rule involving media interdependencies.
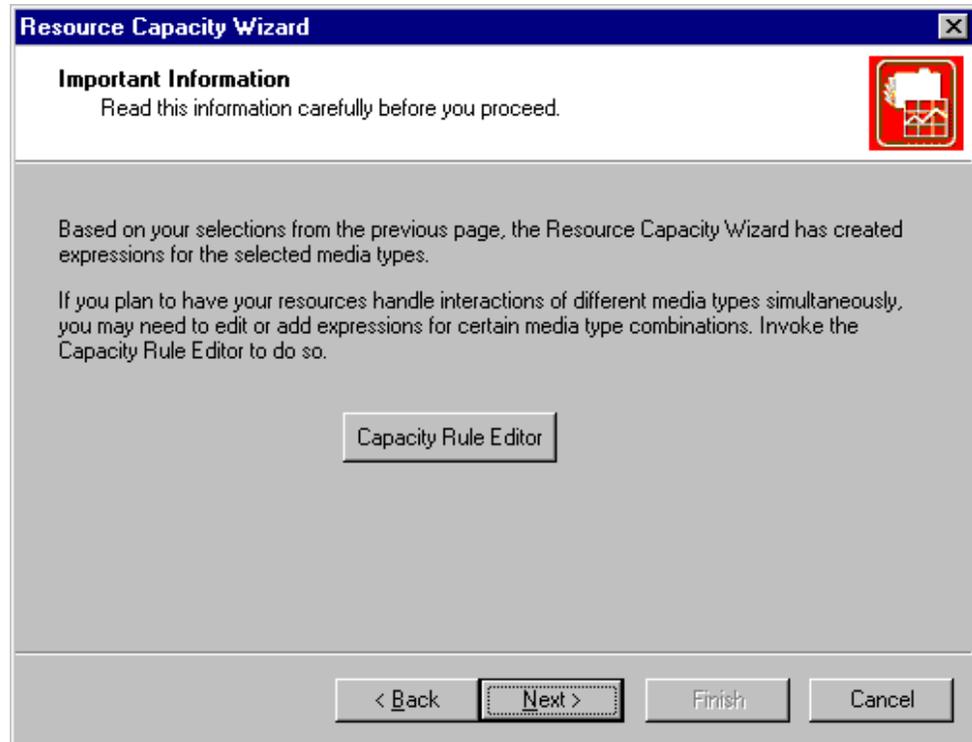
Figure 5: Opening the Capacity Rule Editor from the Resource Capacity Wizard

Once you have created your capacity rule, to revisit its definition:

1. With your script object selected in Configuration Manager, right-click and select `Wizard > Configure` from the context menu that appears.

2. In the resulting dialog box, click the `Advanced` tab and select `Capacity Rule Editor` from the lower right-hand corner as shown in Figure 6.
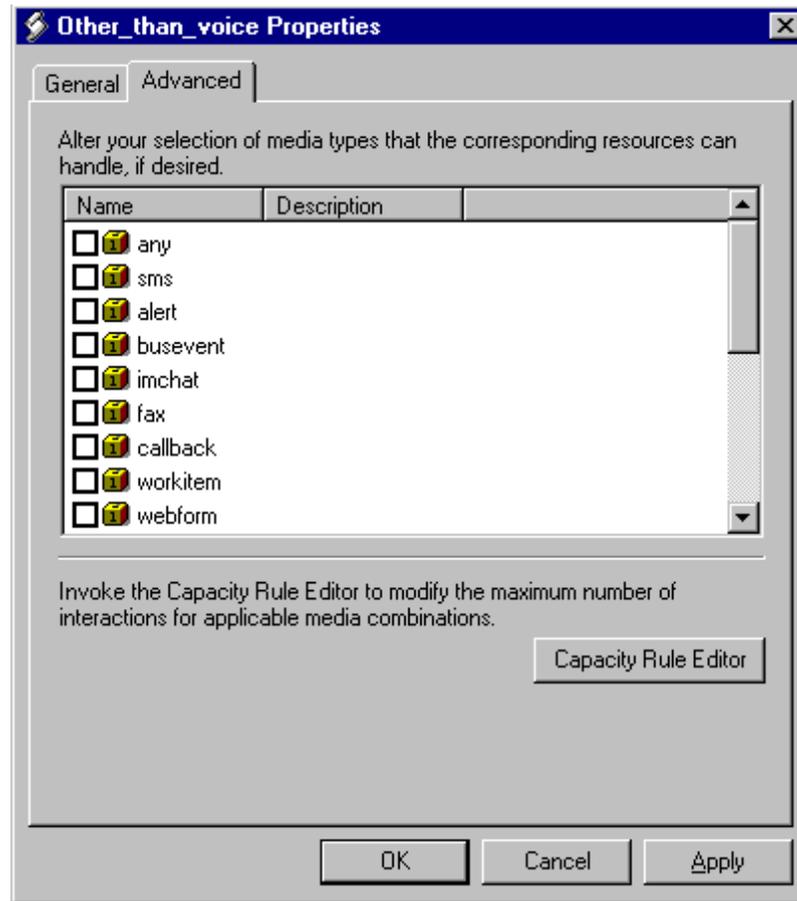
Figure 6: Opening the Capacity Rule Editor from the Properties Page

Exploring the Interface

The Capacity Rule Editor interface does not use menus or menu items. Instead, you execute commands by clicking buttons located across the top of the Editor or by clicking buttons or hyperlinks within the main window. Figure 7 shows the main window and some of its hyper-elements for an already developed capacity rule.
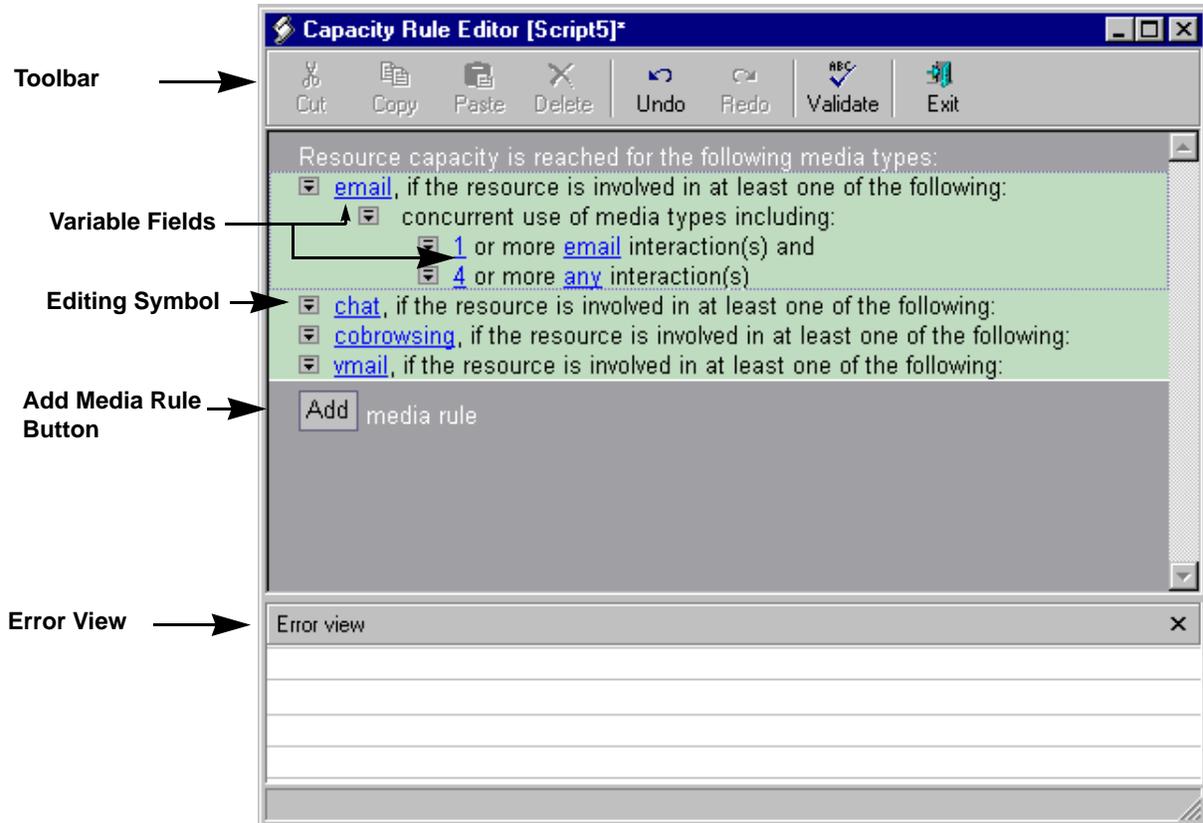
Figure 7: Capacity Rule Editor

CRE Toolbar Buttons

Table 1 explains the functions of the CRE toolbar buttons.

Table 1: Toolbar Buttons of the Capacity Rule Editor

Button Name	Button Function
Cut	Copies to the clipboard and removes the selected media rule from the equation. This button is disabled if you have not selected a media rule.
Copy	Copies the selected media rule into the clipboard. This button is disabled if you have not selected a media rule
Paste	Appends the media rule stored in clipboard to the end of the media rule list. This button is disabled if the clipboard contains no media rule.
Delete	Deletes the selected media rule
Undo	Undoes the last command executed—only one level of undo
Redo	Reexecutes the last Undo.

Table 1: Toolbar Buttons of the Capacity Rule Editor (Continued)

Button Name	Button Function
Validate	Checks the rule for completeness. Exiting the Editor in and of itself does not validate the capacity rule. You must explicitly validate the rule by clicking this button to obtain validation results.
Exit	Prompts you to save or abandon your work and exits CRE. Clicking the Windows control close button performs the same action. There is no explicit save command. Any changes made to the script are temporary until saved.

Hyper-Elements Within the Main Window

The Capacity Rule Editor is not a text editor. You can perform only a limited number of operations within the main window using three hyperelements:

- The editing symbol 🔽 preceding each line
- The blue underlined variable fields
- The `Add` button

Refer to Figure 7 on page 28.

Editing Symbol

Clicking the editing symbol displays a context menu with one or two commands:

- `Add Condition`—adds a new dependent condition immediately below the specific command icon clicked.

  Note: The Resource Capacity Wizard automatically creates media rules for each media type selected at the `Media Types` dialog box. (Refer to Figure 6 on page 27.) If you subsequently delete a media rule, you can click the `Add Condition` button to restore it.

- `Delete`—removes the condition immediately following (that is on the same line as) the command icon clicked.

Figure 8, for example, shows a snippet of a capacity rule both before and after adding a new condition to a media rule. In this figure, you could also add dependent conditions under

    concurrent use of media types including

but you could not add dependent conditions under the level of

    1 or more email interaction(s) and

Before
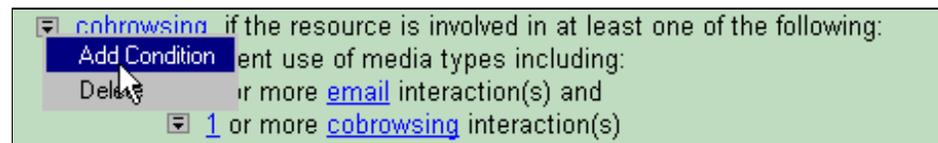
After
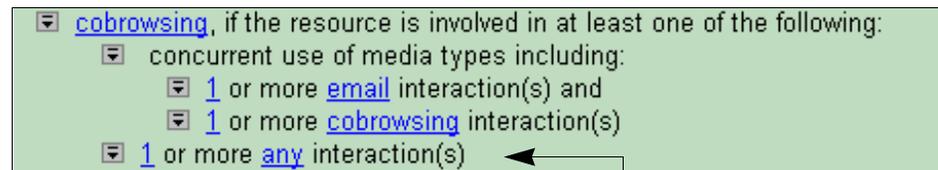
New dependent condition
added to cobrowsing media rule

Figure 8: Adding a Condition to Your Media Rule

Note: Cobrowsing technology is not available in the Genesys 7 release. Its use in Figure 8 is only for illustration purposes.

Variable Fields

You can change the value shown in any of the blue underlined fields by clicking the field and selecting an appropriate value from the context menu that appears. For number fields, select `More` from the context menu to specify a value larger than `5`. In the fields where you specify media types, the Editor only displays values in the context menu for the media types you selected at the `Media Types` screen when you created the script object. Revisit Step 5 on page 19 to add or remove media types from the context menu.

Add Button

Click the `Add` button above the `Error View` to add a new media rule to the capacity rule. This button is activated only if the number of media in the `Media Types` screen exceeds the number of media rules; otherwise, it is disabled. This button is useful if, for instance, you delete a media rule and later decide to restore it to your capacity rule definition. The Editor adds the following line under the last existing media rule:

<unknown>, if the resource is involved in at least one of the following:

You must both define the media type and add appropriate conditions under this line to complete the media rule's definition. The Editor provides no default definition for the media rules you add.

Error View

When you validate your capacity rule, the Editor displays validation results in its `Error View` pane. (Refer to Figure 7 on page 28.) Clicking a particular error from this pane, selects and highlights the erroneous media rule. You can save your capacity rule and exit the Editor whether or not your script contains errors. However, if you invoked the Editor via the Resource Capacity Wizard, you will not be able to close the Wizard by clicking `Finish` at the `Summary` page. It is this closing action that permanently saves and writes the script to the Configuration Layer. If you attempt to apply an invalid capacity rule within your environment, Stat Server ignores it.

Creating a Capacity Rule from Scratch

When you create a Capacity Rule from scratch and invoke the Editor, the Editor opens with a simple definition for each media type you selected at the `Media Types` screen. (Refer to Step 5a on page 19.) The Wizard populates the numeric fields with the maximum values you specified at Step 5b.

The example, shown in Figure 9 is the default display when you select the options shown in Figure 3 on page 20.
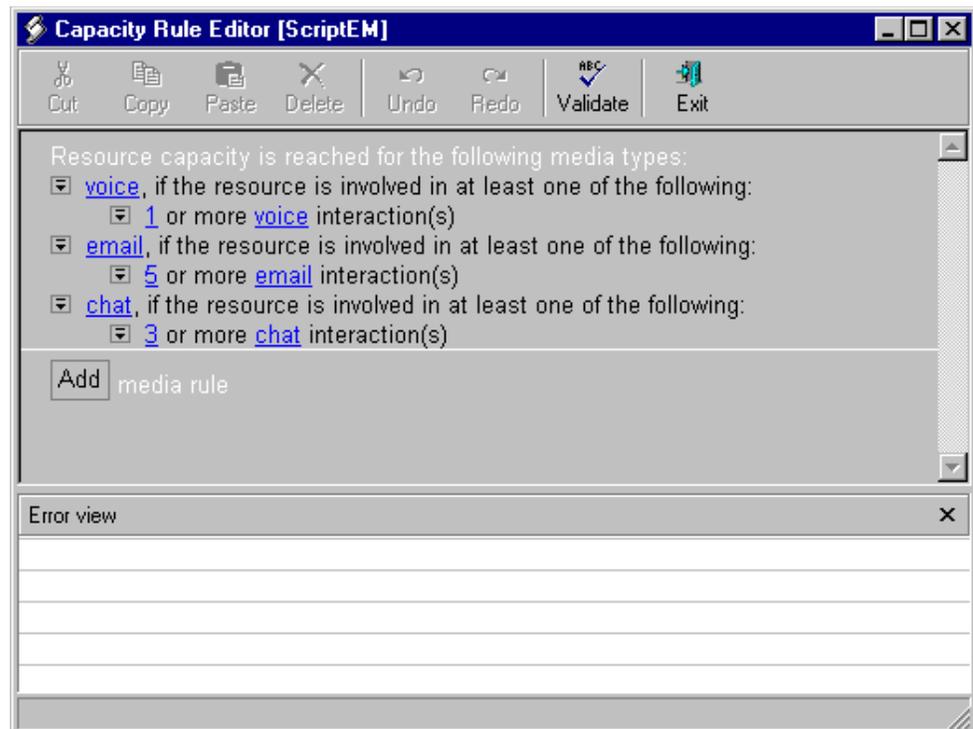
Figure 9: Generated Capacity Rule Based on Simple Media Rules

To refine media-type definitions, perform the following steps:

1. Click the editing symbol and select `Add Condition` from the context menu that appears to define the media rule.

2. Customize your media rule by adding as many subconditions as necessary to suit your environment and indicating the number and type of permissible concurrent interactions.

3. Click `Validate` to check the rule for completeness and correct any problems noted in the Error View.

4. Click `Exit` to save the rule and exit the Editor.

If you delete a media rule and then wish to restore it:

1. Click the `Add` button.

2. Click `<unknown>` and select an appropriate media type from the context menu that appears.

3. Add the appropriate conditions to the media rule.

    Note: The Editor only displays values for the media types you previously selected at the `Media Types` screen when you created the script object.
    ---

4. Add and define additional media rules by repeating these steps.

    Warning! You must specify every applicable media type in your capacity rule. If, for example, you miss defining a chat media rule in your Multimedia environment (which employs chat sessions), then application of the capacity rule to Person, `Place,` and `Tenant` objects will prevent Genesys software from routing a customer-requested chat session to an available agent even if he or she is currently handling no interactions at all. Furthermore, you should be aware of the ramifications of agents checking out a limited number of chat licenses, in this scenario and yet not being enabled to receive chat interactions.

Creating a Capacity Rule from an Existing Rule

When you create a new capacity rule from an existing rule, the Resource Capacity Wizard displays the `Used Media` screen instead of the `Media Types` screen. Figure 10 displays the capacity rule created earlier (on page 20) as the existing capacity rule.

The capacity rule definition is copied from the existing rule. From the `Used Media` screen, you can add media types to your capacity rule, remove them, or

change capacity values in the `Max Capacity` field just as if you were creating a media rule from scratch. The changes you introduce have no impact on the original, copied-from capacity rule—at this screen, you are modifying only the new capacity rule that you are creating. Click `Next` to arrive at the `Important Information` screen, where you can invoke the Capacity Rule Editor. The Editor opens with the same media-type definitions as provided in the existing capacity rule. (Refer to Figure 9 on page 31).
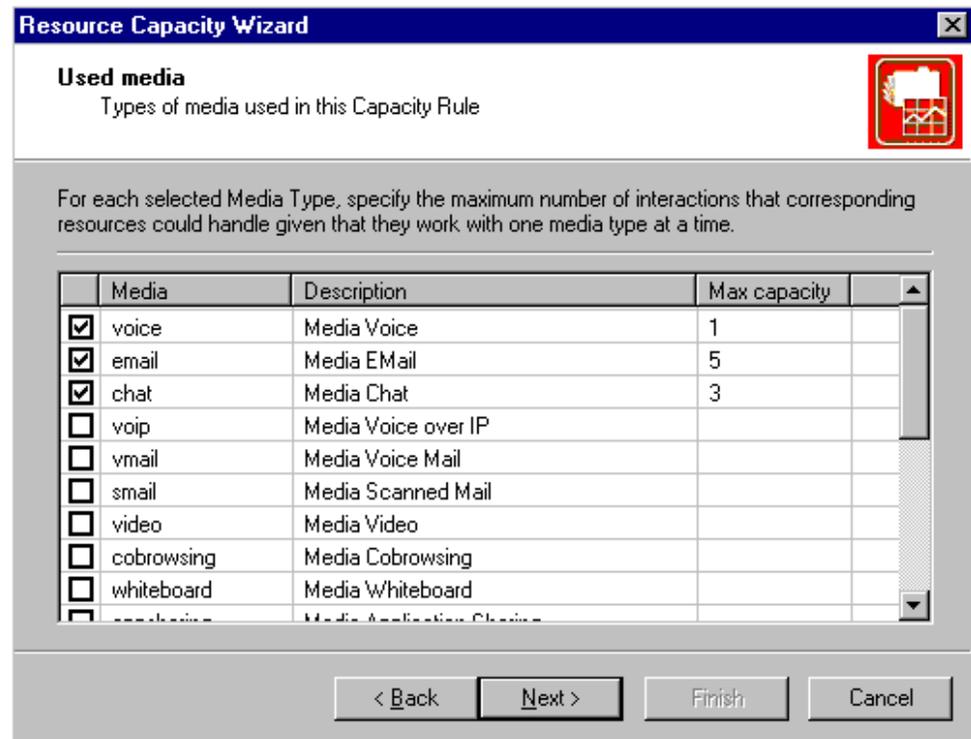
Figure 10: Used Media Screen of Resource Capacity Wizard

You can refine the media-type definitions of your new capacity rule by following the same steps as before (Steps 1 through 4 on page 32).

When Internal Logic Supersedes

Under some conditions, when the logic behind media rules you define conflict, the system's logic may interpret your capacity rule differently than what you intended. This occurs, for example, when you have specified redundant information in one or more media rules, as shown in Figure 11. Under most circumstances, the Capacity Rule Editor displays an appropriate warning message in the `Error View`. This message identifies the problem and provides a suggestion for how you can remedy it.

Resource Capacity Planning Guide   33
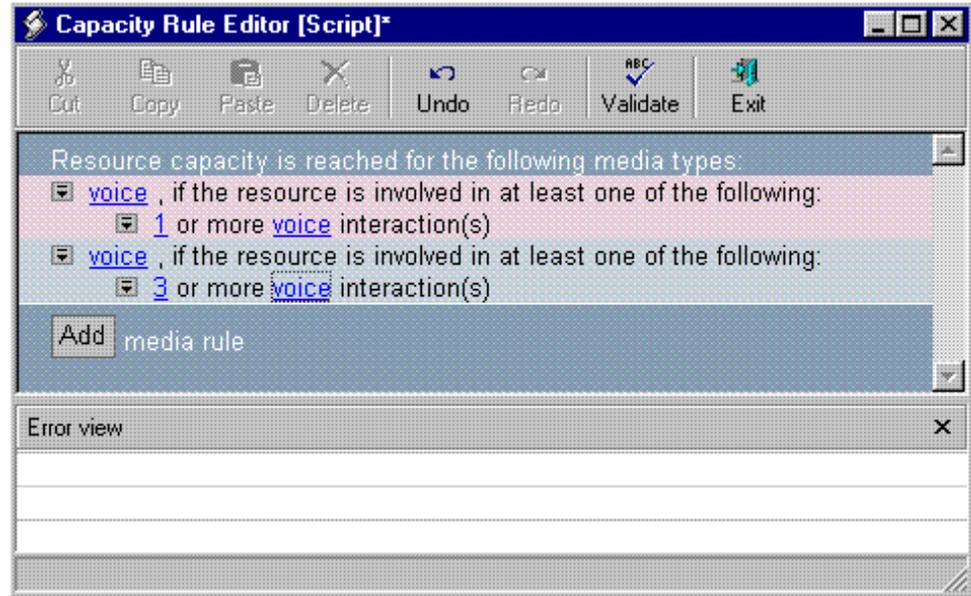
Figure 11: Media Rule Defined With Redundant Information

Internal logic selects the more restrictive clause and interprets this particular construction as having reached capacity if one or more voice interactions are currently in progress for a particular resource.

There are other similar misconstructions that the Capacity Rule Editor will inform you about in the Error View if you validate your capacity rule before exiting the Editor. Refer to Chapter 7, "Troubleshooting Capacity Rules" on page 49 for this information.

![Genesys - AN ALCATEL-LUCENT COMPANY]

Chapter

4

Assigning Capacity Rules to Resources

This chapter describes how to assign capacity rules to `Person`, `Place`, or `Tenant` objects within Configuration Manager:

- Assigning Capacity Rules to Agents, page 35
- Assigning Capacity Rules to Places, page 36
- Assigning Capacity Rules to Tenants, page 37
- Assigning Capacity Rules Using the MCR Wizard, page 38

You cannot assign more than one capacity rule to a particular object. And, at this time, there is no mechanism (such as a scheduler) for automatically changing capacity-rule assignments.

Assigning Capacity Rules to Agents

You assign capacity rules to individual `Person` objects in the Configuration Layer. The router uses that rule to determine agent availability for assigning interactions. You use Configuration Manager to effect capacity-rule assignments.

1. In Configuration Manager, open the `Properties` dialog box of a `Person` object. Figure 12, for example, shows the `Properties` dialog box of the `Person_1` object.
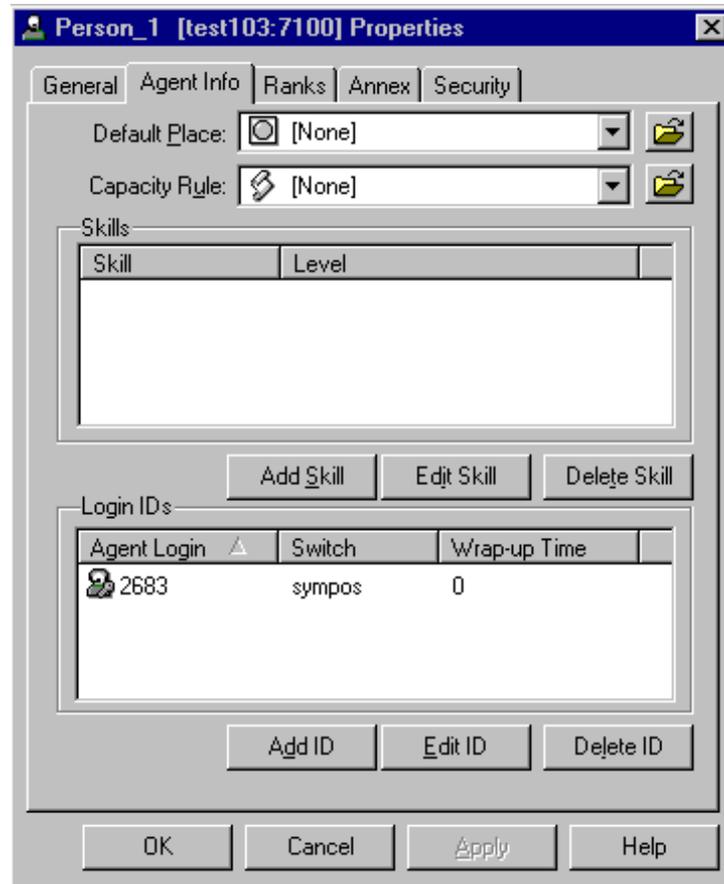
Figure 12: Assign a Capacity Rule to a Person Within Object Properties

2. On the `Agent Info` tab, select the appropriate capacity rule from the `Capacity Rule` list box or click the `Browse` icon to search for and select a capacity rule from the `Browse` dialog box that opens.

3. Click `OK` to save and close the `Properties` dialog box of your object.

The valid capacity rules you assign to agents in your contact center environment take precedence over capacity-rule assignments to the places and tenants to which the agent belongs.

Assigning Capacity Rules to Places

You can assign capacity rules to `Place` objects in the Configuration Layer as well as to `Person` objects. However, such an assignment applies to the agents belonging to the `Place,` and not to the `Place` itself. That is, by assigning a particular capacity rule to a `Place,` you are not defining capacity for the number and mix of interactions that place can handle. Rather, you are defining the capacity for the number and mix of interactions each and every agent logged in to that `Place` can handle.

Indeed, a quick way to assign a specific capacity rule to all agents who are logged in to a particular `Place` is to assign that capacity rule to the agents' corresponding place:

1. In Configuration Manager, open the `Properties` dialog box of a `Place` object.

2. On the `General` tab, select the appropriate capacity rule from the `Capacity Rule` list box or click the `Browse` icon to search for and select a capacity rule from the `Browse` dialog box that opens.

3. Click `OK` to save and close the `Properties` dialog box of your `Place` object.

The valid capacity rules you assign to places in your contact center environment take precedence over capacity-rule assignments to the `Tenant` to which the `Place` is a part. However, the assignments do not preempt valid assignments made directly to `Person` objects that may belong to the `Place`. This means if capacity-rule assignments are made to both an agent and his corresponding place, Stat Server uses the rule assigned to the agent—if it is valid—over the capacity rule assigned to his place.

Note: At this time, you cannot assign capacity rules to agent or place groups.

Assigning Capacity Rules to Tenants

Lastly, you can assign capacity rules to `Tenant` objects in the Configuration Layer as well as to `Place` and `Person` objects. Such an assignment applies to all of the agents belonging to the tenant—not to the tenant itself—provided that you have assigned no superseding rule (to the place or agent). By assigning a particular capacity rule to a tenant, you are defining the capacity for the number and mix of interactions that each and every agent belonging to that tenant can handle. This, in no manner, affects the number of interactions that can be processed within the tenant.

1. In Configuration Manager, open the `Properties` dialog box of a `Tenant` folder.

2. On the `General` tab, select the appropriate capacity rule from the `Default Capacity Rule` list box or click the `Browse` icon to search for and select a capacity rule from the `Browse` dialog box that opens.

3. Click `OK` to save and close the `Properties` dialog box of your `Tenant` folder.

The capacity rules that you assign to tenants do not preempt the assignments made directly to `Person` or `Place` objects that may belong to that tenant. If capacity-rule assignments are made to an agent, his corresponding place, and his corresponding tenant, Stat Server uses the rule assigned to the agent—if it is valid—over the capacity rule assigned to his place or to his tenant. If the capacity rule assigned to the agent is invalid, Stat Server considers the place-assigned capacity rule before considering the rule assigned to the tenant.

Assigning Capacity Rules Using the MCR Wizard

Toward the end of the Multimedia Wizard are two screens for deploying Genesys-provided capacity rules for the Multimedia solution. From these screens, you can deploy three prebuilt capacity rules within your environment and assign one of them to your `Tenant` object.

Note: At this time, you can use the Multimedia Wizard to assign capacity rules only to `Tenant` objects.

1. At the `Resource Capacity Rules Deployment` screen (shown in Figure 13), specify the folder in Configuration Manager that is to store the Genesys-provided rules. The `Scripts` folder is the default location. Click the `Browse` icon if you want to specify a different folder. Then, click `Next`.
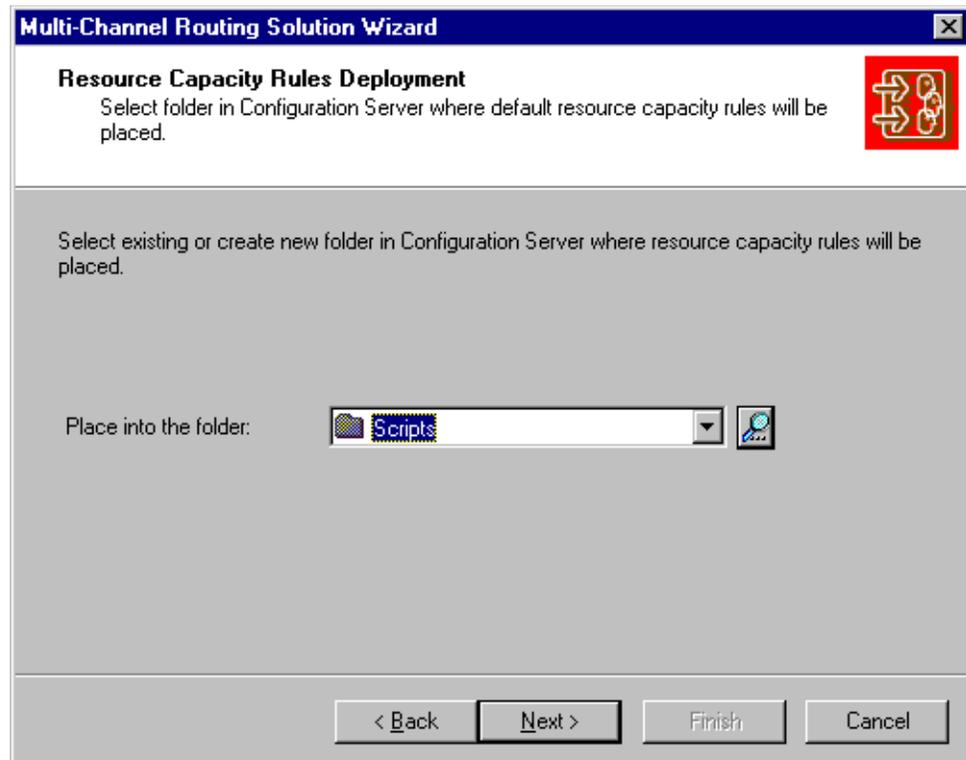
Figure 13: Deploying the Genesys-Provided Capacity Rules

The Wizard copies the three Genesys-provided capacity rules for the Multimedia solution to the folder you specify:

- `Default_One_interaction_of_any_type_only`
- `Default_One_media_allows_more_than_one_interaction`
- `Default_Voice_interactions_always_allowed`

See Chapter 5 for more information about these rules.

2. At the `Resource Capacity Rules Selection` screen, from the drop-down list box, choose a default capacity rule to apply to your tenant. Or, click the `Browse` icon, as shown in Figure 14, to select a capacity rule from the `Browse for Script` dialog box. Then, click `Next`.
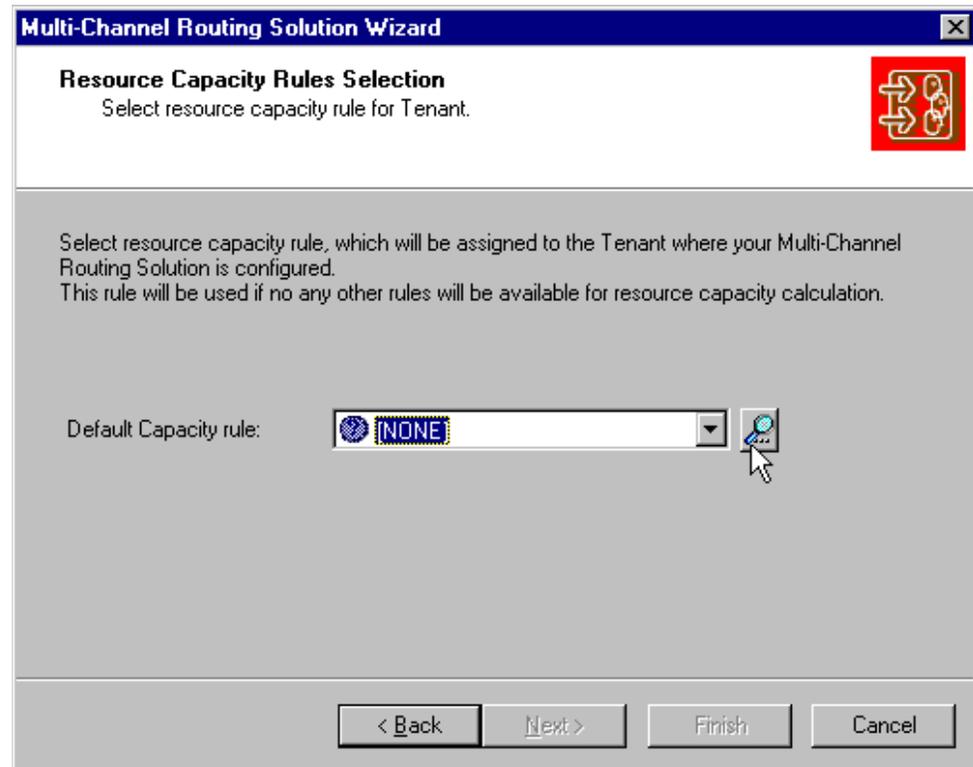
Figure 14: Multimedia Wizard: Applying a Default Capacity Rule to the Tenant

All agents belonging to the Tenant automatically inherit the capacity rule you assigned to the Tenant. If you want to assign a different capacity rule to an individual `Person` or `Place`, refer to the first two sections in this chapter.

3. Complete the Multimedia Wizard.

![GENESYS AN ALCATEL-LUCENT COMPANY]

Chapter

5

Genesys-Provided Capacity Rules

In the Multimedia 7.*x* release, Genesys supplies three out-of-box capacity rules for you to assign to `Person, Place,` or `Tenant` objects in Configuration Server. These rules are stored in the tenant's Solutions folder of Configuration Manager when deployed using the Multimedia Wizard. If you do not assign any capacity rule to these objects, then Stat Server's inherent `Default` capacity rule applies.

This chapter describes the `Default` and the three Genesys-provided rules:

Default Capacity Rule

Stat Server uses the `Default` capacity rule when no capacity rule has been assigned directly or indirectly to an agent. This may occur when no capacity rule has been associated with the corresponding `Person, Place,` and `Tenant` objects in the Configuration Layer. This default rule is not accessible within the Configuration Layer and is uneditable as it is embedded within Stat Server logic.

The `Default` capacity rule allows an agent to receive one interaction each of any media type configured within the Configuration Layer. If, for example, Configuration Manager has the `voice, email,` and `chat` media types, then each agent can receive one voice interaction or one e-mail interaction or one chat interaction if he or she is not already working on an interaction of any type. If you configure an additional media type at a later time—`fax` for example—then

the `Default` capacity rule automatically allows an agent to receive one fax interaction or one voice interaction or one e-mail interaction or one chat interaction before the software determines that capacity is reached. Likewise, if you remove a configured media type from the Configuration Layer, the `Default` capacity rule applies and Stat Server no longer sends interactions of that media type to that agent. Figure 15 illustrates how this capacity rule is defined given three media types.
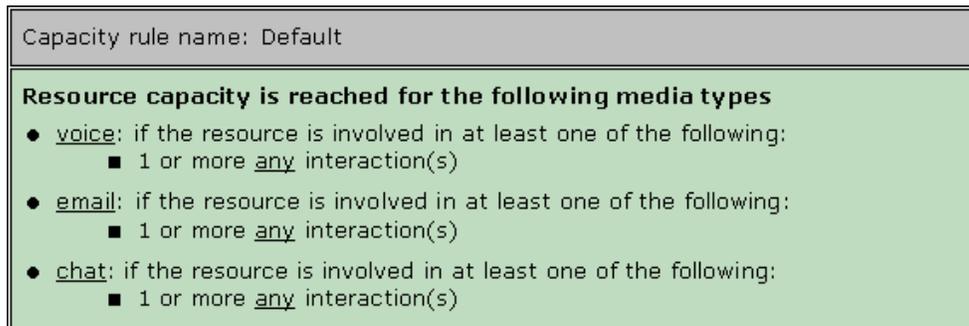
Figure 15: Default Capacity Rule

To define it another way, the rule states that if an agent has at least one interaction that he or she is already working on, a new inbound interaction of that type will not be distributed to him/her.

Default_One_interaction_of_any_type_only Capacity Rule

This capacity rule states that new e-mail, chat, or voice interactions cannot be distributed to an agent if he or she is already participating in any other interaction. This differs from the `Default` capacity rule just described in that three media rules for these media types are the only three comprising the capacity rule; whereas, the `Default` capacity rule will automatically formulate a media rule for each configured media type.

Figure 16 shows the definition of the `Default_One_interaction_of_any_type_only` capacity rule.

```
Capacity rule: Default_One_interaction_of_any_type_only
```

Resource capacity is reached for the following media types
- voice: if the resource is involved in at least one of the following:
    - 1 or more any interaction(s)
- email: if the resource is involved in at least one of the following:
    - 1 or more any interaction(s)
- chat: if the resource is involved in at least one of the following:
    - 1 or more any interaction(s)

Figure 16: Default_One_interaction_of_any_type_only Capacity Rule

Note: This rule does not prevent an agent from participating in more than one interaction. The rule merely prevents the routing of new interactions to the agent under the stated circumstances.

Participation in an interaction includes those instances where the agent initiates customer contact, accepts an interaction that is transferred to him/her, and is involved in interactions other than voice, e-mail, and chat.

Default_One_media_allows_more_than_one _interaction Capacity Rule

This capacity rule prevents an agent from simultaneously handling more than one interaction of each media type, except e-mail, for which the rule allows for no more than five simultaneous interactions. Maximum capacity using this rule is one voice, five e-mail, and one chat interactions. Figure 17 shows how this capacity rule is defined.

```
Capacity rule: Default_One_media_allows_more_than_one_interaction
```

Resource capacity is reached for the following media types
- voice: if the resource is involved in at least one of the following:
    - 1 or more voice interaction(s)
- email: if the resource is involved in at least one of the following:
    - 5 or more email interaction(s)
- chat: if the resource is involved in at least one of the following:
    - 1 or more chat interaction(s)

Figure 17: Default_One_media_allows_more_than_one_interaction Capacity Rule

Default_Voice_interactions_always_ allowed Capacity Rule

This capacity rule favors voice interactions over other interaction types in allowing agents to handle one voice interaction plus one interaction of any other type. Maximum capacity is reached when the agent participates in any of the following interactions:

- One voice interaction
- One voice and one chat interactions
- One voice and one e-mail interactions

Figure 18 shows how this capacity rule is defined.
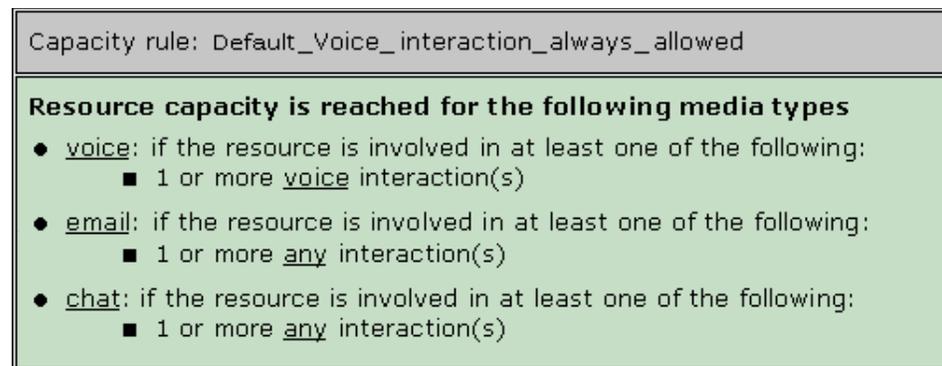
Figure 18: Default_Voice_interactions_always_allowed Capacity Rule

6 Capacity Snapshot

Stat Server's interpretation of the capacity rules you define are manifested in *capacity snapshots* which Stat Server logs whenever certain events take place, including:

- Any time a place is added to your configuration.

- When the state of readiness changes at a particular place for a particular media from `NotReady` to `Ready` or from `Ready` to `NotReady`.

- When assigned capacity rules are created, altered, or deleted.

- As the number of concurrent or assignable interactions for each media type changes at a particular place.

This capacity snapshot appears in the Stat Server log following this general format:

```
<date> <time> <loglevel>: Capacity snapshot for place '<placeID>'('<tenant>'), agent
    '<agentID>'('<tenant>') (CR='<CapacityRuleName>')

    media_state  current_number   max_number    routable
    -----------  --------------   ----------    --------------
    [    S            N₁              N₂            N₃ ] <-- <mediatype>
```

where $[\ S\ N_1\ N_2\ N_3\ ]$ is a *capacity vector* relating to one particular media type. The four dimensions of this vector represent:

- The state of readiness, S, of a particular media at a particular place: either `NR` or `R` for `NotReady` and `Ready` respectively.

- The number of interactions, N_1, currently in progress at a specific target for the particular media.

- The maximum number of interactions, N_2, of the particular media that can be routed to a specific target according to the current capacity rule given the condition that the number of interactions on each of other medias remains unchanged. This calculation does not take into account the

physical capacity of the multimedia DN, but rather this value corresponds to the value defined in the capacity rule for the person, place, or tenant resource.

*   The number of additional interactions, N_3, of a particular media that can be routed without violating the capacity rule given the condition that the number of interactions on each of the other medias remains unchanged.

Media State

The `Ready/NotReady` media state recorded in the capacity vector differs from `Ready/NotReady` status of `Place` objects, which is documented in the *Stat Server User's Guide.* The `Ready` media state, as specified within a capacity vector, signifies that the Genesys router can route an interaction of a particular media type to a DN at a Genesys Place, whereas the `NotReady` media state signifies that the Genesys router cannot route the interaction.

Stat Server derives a place's media state from the independent media states of all of the DNs located at that place. This DN media state can take on different interpretations depending on the DN type and DN switch type:

*   The media state on a voice treatment port (VTP) DN is considered to be `Ready` if and only if the status of the VTP DN is `WaitForNextCall`.

*   A paired Position-Extension Meridian DN is `Ready` if any of the following apply:
    *   The status of the Extension DN is `WaitForNextCall`.
    *   An agent is logged in to the Position DN.
    *   The Position DN holds any status other than `AfterCallWork` or `NotReadyForNextCall`.

Note: The media state of a DN configured on a Meridian 1 or Meridian Link Symposium switch takes into account the pairing of Position and Extension DNs on the Meridian switch. For purposes of determining capacity, Stat Server considers each pairing of Position and Extension DNs as one DN.

*   The media state for most other DN types is `Ready` if and only if:
    *   An agent is logged in to the DN and
    *   The DN's status is `WaitForNextCall`.

A Place's media state, then, is defined to be `Ready` if the media state of at least one DN (or one pairing of Position-Extension Meridian DNs) at that Place is `Ready`. A Place's media state for other-than-voice media is equivalent to the Place's status.

Capacity Vector Examples

The [NR 0 1 0] capacity vector for target PlaceX and Voice media type signifies that PlaceX is in NotReady state, no voice interactions are currently registered at PlaceX, and that Stat Server can assign no interactions to PlaceX. From this information, you can surmise that Stat Server has not yet connected to T-Server and because of this, it is not possible to know whether or not a voice interaction is currently underway.

Capacity vector [R 1 2 1] at PlaceY for E-mail media type signifies that PlaceY is in Ready state, one e-mail interaction is currently underway at PlaceY, and one additional e-mail interaction can be routed to PlaceY.

Note: N_1 may exceed N_2 in situations where the agents themselves initiate interactions.

Review your own Stat Server log for additional capacity vector examples to better understand the mechanics of how Stat Server applies your capacity rules to resources.

7

Troubleshooting Capacity Rules

When you validate a capacity rule, you may encounter errors or warnings on the `Error View` pane of the Capacity Rule Editor (CRE) that require resolution before the rule can be used. You may also encounter messages indicating capacity rule–related problems in your Stat Server log or the Message Server if you have set up alarm conditions.

This chapter lists some common errors and describes how to resolve them:

No Media Rules

The `Error View` displays the following message when you attempt to save or validate a capacity rule when it is empty:

```
Error: Capacity Rule does not contain any media rules. Add a
media rule to the Capacity Rule.
```

CRE does not allow you to save empty capacity rules. Each capacity rule must contain at least one media rule, which itself specifies at least one condition. Figure 19 illustrates an empty capacity rule.
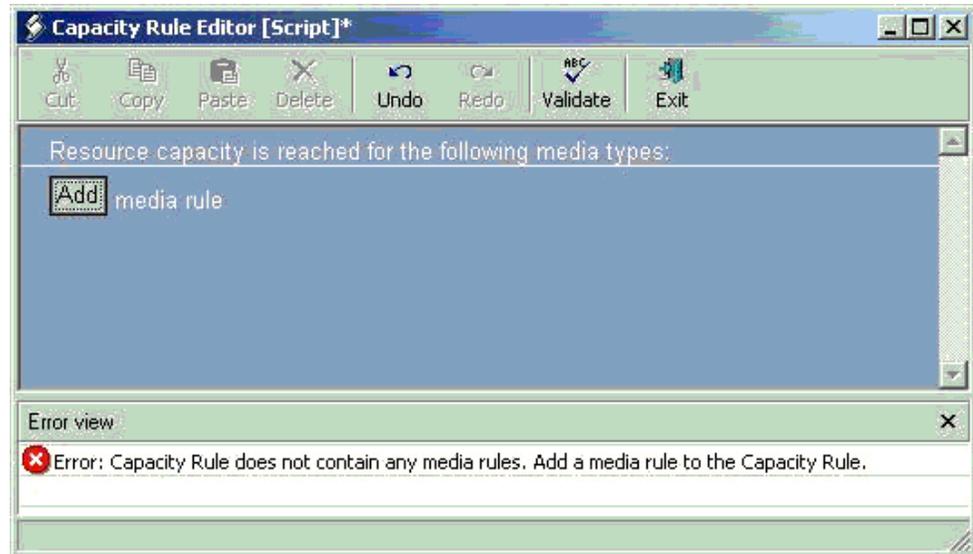
Figure 19: Empty Capacity Rule

To correct this error:

1. Add a media rule to a capacity rule by clicking the `Add` button.

The Capacity Rule Editor inserts a media rule labeled `<unknown>`.

2. Click the editing symbol preceding `<unknown>` and select `Add Condition` from the context menu that appears to define the media rule.

3. Add and define additional conditions and/or media rules as necessary.

4. Validate the rule.

Missing Media Rule

The `Error View` displays the following message when you attempt to validate a capacity rule and the Capacity Rule Editor determines that a media rule is missing:

```
Error: Media X is used in media rule for media Y but Capacity
Rule does not contain a media rule for media X. Create a media
rule for X.
```

The capacity rule must contain a dedicated media rule for each media type used in the capacity rule. Figure 20 illustrates a capacity rule that limits `vmail` interactions when a resource is involved in one or more `chat` interactions; however, the capacity rule fails to define a `chat` media rule.
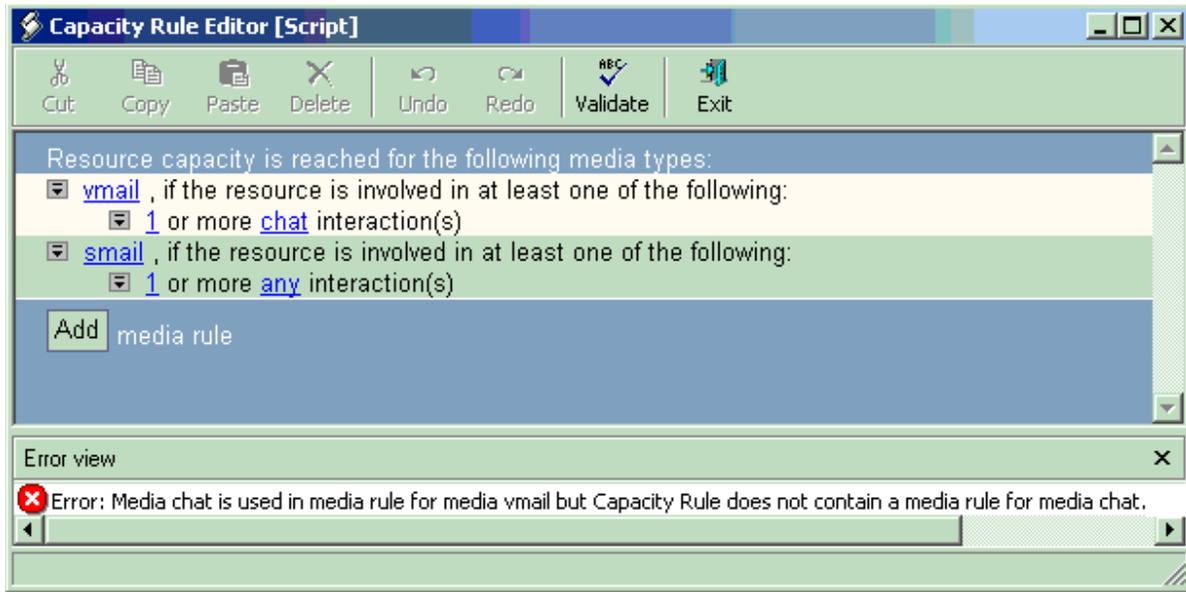
Figure 20: Example of Missing Media Rule

1. To correct this error, either click the Add button to add a media rule or define the media rule for the media type that is missing.

2. Repeat this action for each media type used in the capacity rule that is not already defined.

3. Validate the rule.

Alternatively, you can remove any condition from the existing media rules for which no dedicated media rule exists.

Infinite Capacity

The Error View displays the following message when you attempt to validate a capacity rule and the Capacity Rule Editor detects media rules having potentially infinite capacity:

```
Error: Media rule for media X has infinite capacity. Add a
condition to limit the capacity of media X.
```

Each media rule must have a restrictive condition for its media type. Figure 21, for example, illustrates an infinite capacity situation. There is no limit to the number of vmail interactions that could be assigned to a resource when the number of scanned mail (smail) interactions is less than four.
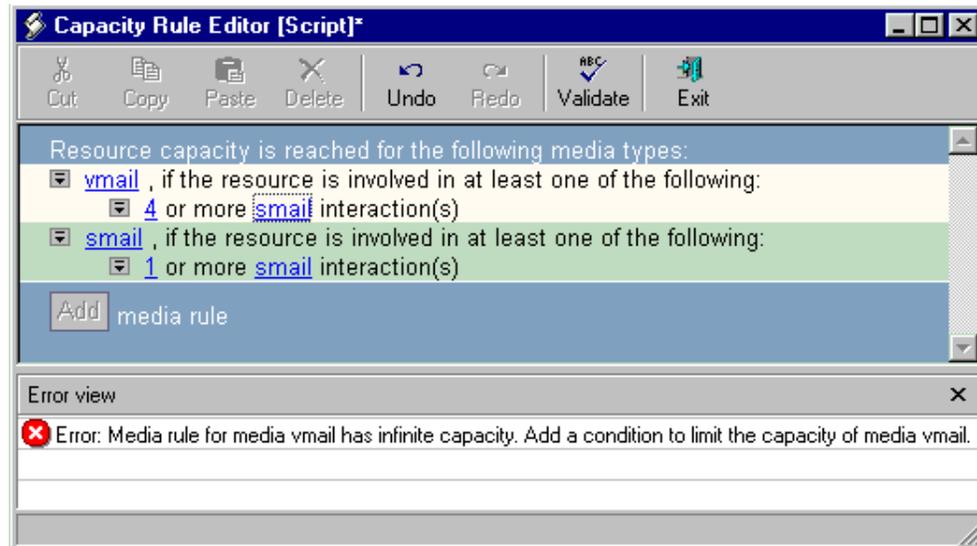
Figure 21: Example Illustrating Infinite Capacity

To correct this error:

1. Click the editing symbol preceding the erroneous media rule.

2. Select Add Condition from the context menu that appears.

3. Define the condition to address interactions of the media rule's own type (or any type).

4. Validate the rule.

Figure 22, for example, shows that a condition addressing vmail interactions has been added to the vmail media rule.
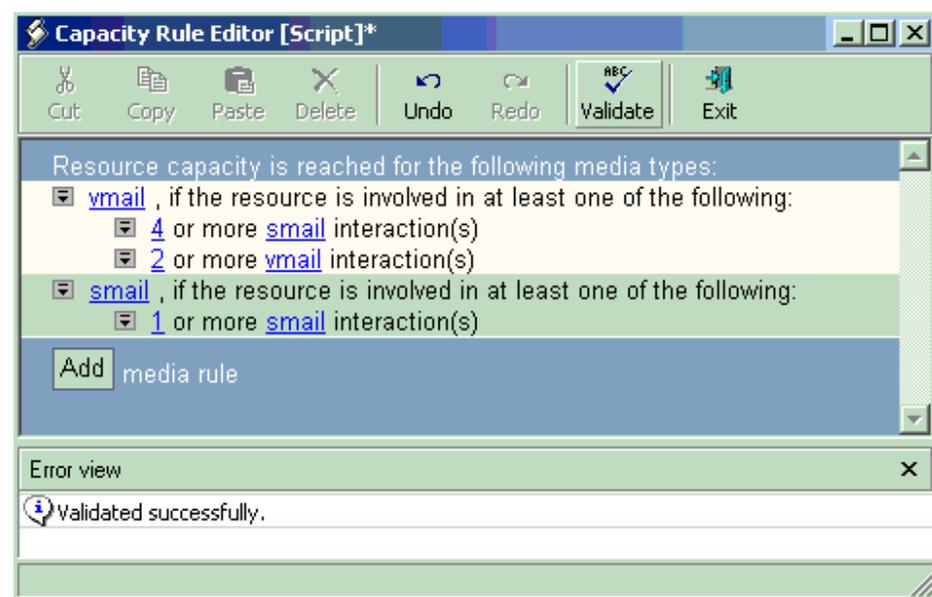
Figure 22: Infinite Capacity Resolved

No Conditions

The `Error View` displays the following message when you validate a capacity rule and no conditions have been created for a media rule:

```
Error: Media rule for media X does not have any conditions. Add a
condition to the media rule.
```

Each media rule must have at least one condition. Figure 23 illustrates a capacity rule with one media rule that specifies no conditions.
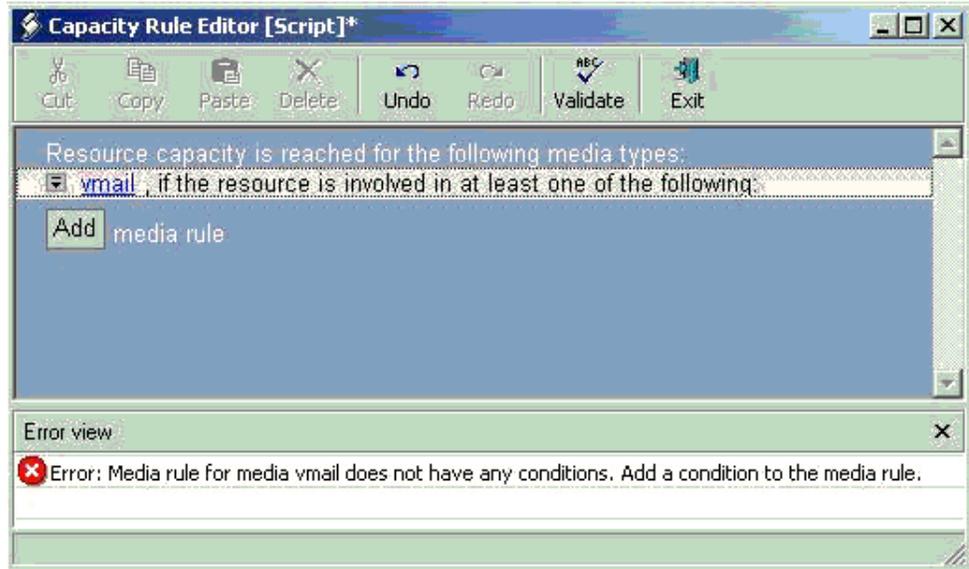
Figure 23: Example of a Media Rule Without Conditions

To correct this error:

1. Click the editing symbol preceding the erroneous media rule.

2. Select `Add Condition` from the context menu that appears.

3. Define the condition.

4. Repeat Steps 2 and 3 for the number of conditions you want to ascribe.

5. Validate the rule.

Undefined Media

The `Error View` displays the following message when you attempt to validate a capacity rule containing an undefined media rule:

```
Error: Media rule with undefined media. Specify a media for the
media rule.
```

When you click the `Add` button, CRE inserts a temporary structure which it names `<unknown>`. The `unknown` media does not hold any significance to router

and you should change this to a meaningful media, such as `voip,` `chat,` or `email` before leaving the Editor. Figure 24 illustrates a capacity rule with an `unknown` media type.
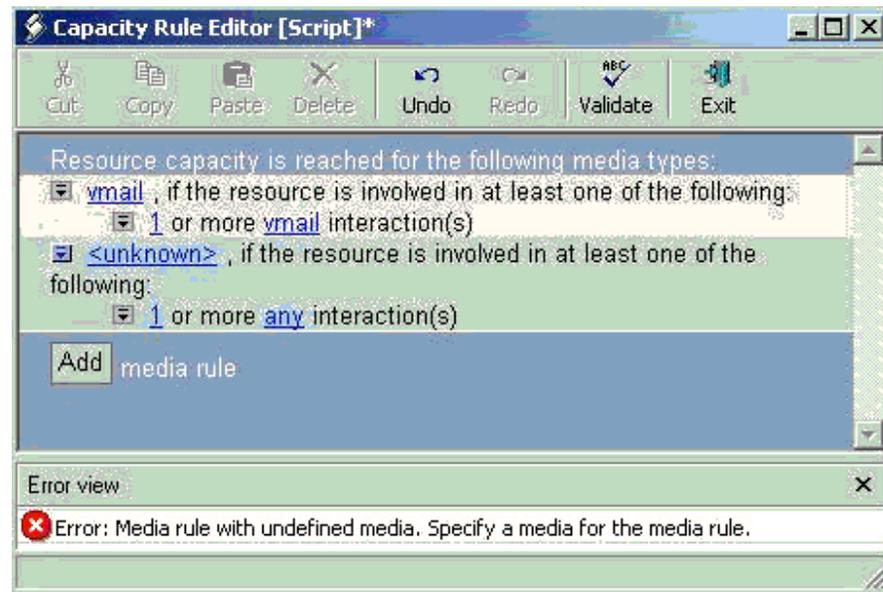
Figure 24: Example of Media Rule with Unspecified Media

To correct this error:

1. Click the `<unknown>` link and select an appropriate media from the popup menu that appears.

2. Make sure the media rule includes a restrictive condition limiting the number of interactions of the media's type.

3. Validate the rule.

Duplicated Media Rule

The `Error View` displays the following message when you attempt to validate a capacity rule containing two or more media rules of the same type:

`Error: Media rule duplicated. Remove duplicate media rule.`

Capacity rules should only contain a single media rule for each media type. Figure 25 illustrates this error in defining two media rules for `vmail.`

**Figure 25: Example of Two Identical Media Rules Present for One Media
Type**

To correct this error, either:

1. Delete the redundant media rule or change the redundant media rule to a
medium that has not already been defined for the capacity rule.

2. Validate the rule.

Media Rule Too Complex

The Error View displays the following message when you validate a capacity
rule containing two or more media rules of the same type:

```
Error: Media rule for <media_name> is too complex. Try to delete
some conditions that use media "any"
```

The Capacity Rule Editor has some internal limitations for the number of
concurrent conditions and conditions specifying any interaction that it can
handle. Figure 26 illustrates a capacity rule that surpasses these internal
limitations.
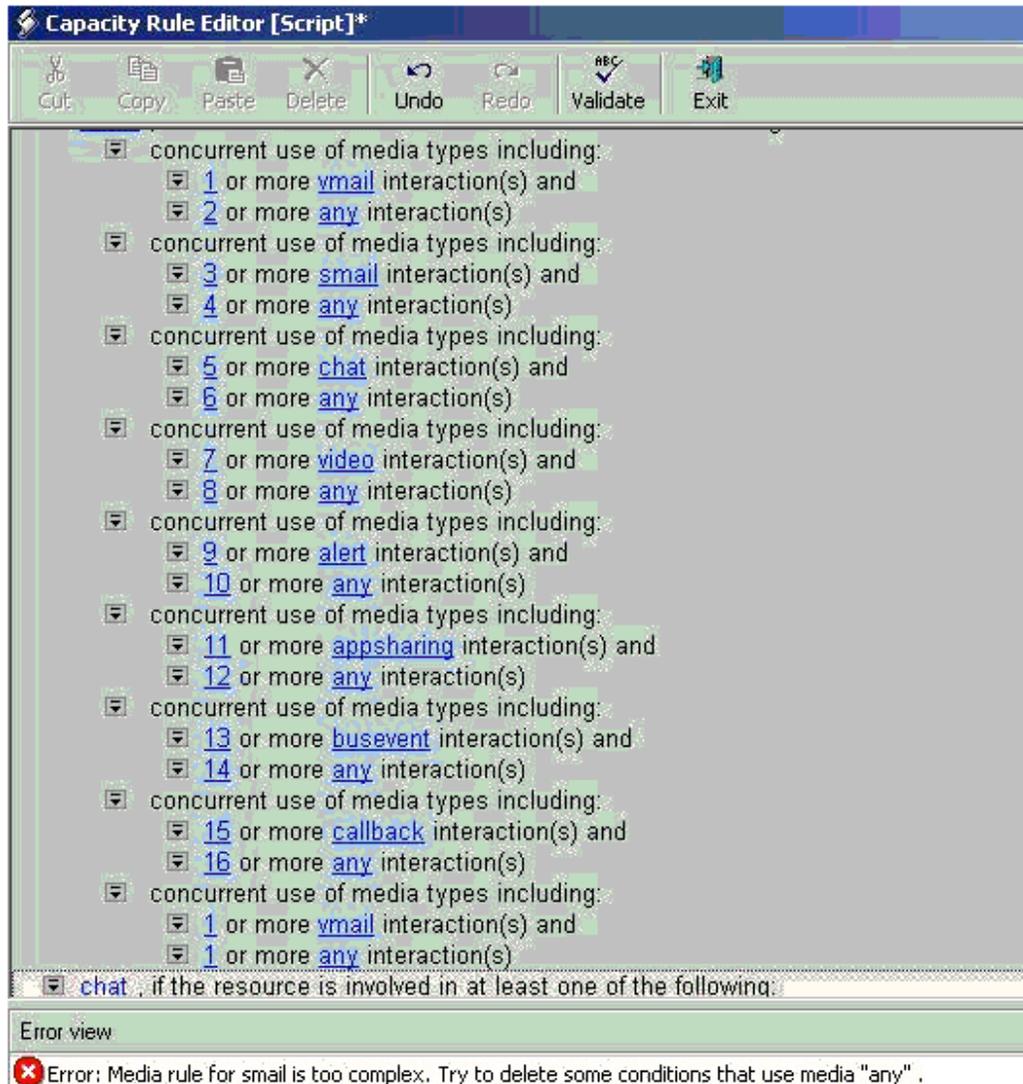
Figure 26: Example of Too Complex Media Rule

To correct this error:

1. Remove from your media rule some of the any interaction used in concurrent conditions.

2. Validate the rule.

How Stat Server Handles Invalid Rules

If an agent capacity rule is invalid or missing, the place capacity rule applies to the agent. If the place capacity rule is invalid or missing, then the tenant capacity rule applies to the agent. If the tenant capacity rule is invalid or missing, then the `Default` capacity rule applies to the agent.

Index

Symbols

S

T

U

V

W

Index